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Flood preparedness decisions and stakeholders' perspectives on flood early warning in Bangladesh

Sazzad Hossain^{1,3}, Hannah Cloke^{1,2}, Andrea Ficchi¹, and Elisabeth Stephens¹

¹University of Reading, Geography and Environment, United Kingdom of Great Britain and Northern Ireland

(mdsazzad.hossain@pgr.reading.ac.uk)

²Department of Earth Sciences, Uppsala University, and Centre of Natural Hazards and Disaster Science, Uppsala, Sweden

³Flood Forecasting and Warning Centre, BWDB, Bangladesh

There is high temporal variability in the occurrence of the monsoon floods in Bangladesh during the South Asian summer monsoon. Detailed flood forecast information about flood timing and duration can play a vital role in flood preparedness decisions. The objective of this study is to understand different stakeholder perceptions about existing forecasting tools and data, and how these can support preparedness and response activities. Forecast users can be divided into three broad categories-national, sub-national and community level. The stakeholders working at national level are involved in policy making while the sub-national level involved in implementation of policies. In order to identify the appropriate lead-time for better flood preparedness and the challenges in communicating probabilistic forecasts to users, semi-structured interviews with key stakeholders involved in various sectors of flood disaster management at national and sub-national level, community level household surveys, focus group discussions and a national consultation workshop were undertaken during the 2019 monsoon.

It was found all major stakeholders working at national and sub-national levels are aware of the availability of forecasts and receive flood forecasts from the Flood Forecasting and Warning Centre (FFWC). However, about 40% of the respondents at the community do not receive forecast information. Before the flood event, policy level stakeholders need to know the availability of resources and preparedness at the sub-national level for better response activities. On the other hand, sub-national level stakeholders of different government agencies act as a bridge between policy level and the local community. Existing short-range forecasts cannot provide information about the potential flood duration which is essential for resources assessment, mobilization and preparedness activities.

People living in the floodplain are aware about the flood seasons as it is an annual phenomenon. However, they can anticipate floods events only 2 to 3 days beforehand based on the available early warning and their risk knowledge. This short-range forecast can be used for some basic household level response activities such as protecting household equipment or moving their livestock to a safer place. It is essential to know the actual duration and flood extent for their agricultural decisions such as understanding when to transplant young crops into the field. The study found that all stakeholders need forecast information with a lead-time between 15 to 20

days for better flood preparedness decisions. People are likely to have seen deterministic forecasts so far and are not used to probabilistic forecasts with multiple scenarios for a same event. However, national forecast bulletins may include probability of flooding events based on a threshold known as flood danger level. Capacity development of the local community is necessary to improve understanding of the probabilistic forecast and overcome communication challenges.